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ADJUSTING MARGIN AND RISK

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MARGIN REQUIREMENTS AND
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*Tips and Tricks to Reduce
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Alleviate Margin Calls*

Carley Garner

Margin, and thus margin calls, are the necessary evil of trading leveraged instruments. Without margin, speculators would be subject to substantial default risk in addition to the risk of market losses. As a result, the futures markets would likely be less efficient.

Unfortunately, many traders allow their fear of a margin call to persuade their trading strategy; however, the event of a margin call doesn't have to be the horrifying experience that many expect it to be. There are tactics that can be used to reduce margin requirements as a means of avoiding a margin call, or as opposed to scrambling to wire funds to a struggling trading account once a margin

issue arises.

What Is Margin?

Margin is a risk-based good faith deposit required by futures exchanges to participate in a particular market. Simply put, it is the amount of money that traders must have on deposit to buy or sell a particular futures contract or execute a short option.

Each futures contract has a stipulated margin requirement; the amount can vary greatly from contract to contract. For instance, the margin on a single wheat futures contract could be \$1,600, but the margin required to hold a gold futures

might be \$6,500. I use the word “might” to infer that the figures aren’t static; they are dynamic. Exchanges have the right to adjust margin requirements at a moment’s notice. Changes are often made as markets enter and exit periods of volatility. That said, margin requirements tend to go up faster than they go down. Once an exchange increases margin levels, it can take a considerable amount of time before they adjust them lower, if at all. As an example, the CME (Chicago Mercantile Exchange) doubled the margin requirement on the e-mini S&P 500 during the 2008 market meltdown, and their margin rates have yet to reach precrisis levels.

Exchanges determine margin requirements through the assessment of the risk related to holding a particular position. The required deposits often correlate with the perceived maximum loss potential in a single trading session. To illustrate, if the daily price limit in soybeans is 75 cents and each penny of price movement is worth \$50, the exchange might require traders to have \$3,750 ($75 \times \50), or a little more, in a trading account per contract traded.

Why Is Margin a “Necessary Evil”?

Futures exchanges guarantee each transaction that they clear. Unfortunately,

the guarantee isn't that you will make money, but it is assurance that if you do speculate correctly, you will be compensated in the amount deserved based on entry and exit price. This seems to be a given but it isn't. Those speculating in Forex, as opposed to futures, aren't afforded the same luxury; in other words, they are subject to counter-party risk. For FX traders to actually make the money that they deserve based on their entry and exit price (assuming the trade is profitable), the party on the other side of their transaction must have met their monetary obligation to "pay" for their losses. That said, many traders have participated in FX for years without any incidence of

counter-party risk, but even though it hasn't been a common issue in the past, the risk of it becoming a problem in the future still remains.

Without ensuring that speculators have enough funds on deposit to cover potential position draw downs, the exchanges and brokerage firms carry the risk of speculators simply walking away from their trading losses. If this reminds you of the real estate collapse, you are on the right track. Prior to the debacle, home owners were able to purchase property with very little down payment, or margin; some of those discovering they had purchased at unfavorable prices simply defaulted on their mortgage. In essence, the real estate market during the

later part of the 2000 decade was operating similar to a giant futures market without margin requirements and, even worse, without accountability. Many of those who originally purchased homes on leverage, and without “margin” in the form of a down payment, later walked away from their liability, leaving the banks holding the bag.

In the world of futures trading, the exchanges act as the banks in that they provide traders access to products with substantial value with little “down payment” or margin. However, unlike the housing market, the futures exchanges have established written and enforced rules in regards to proper margining. Also, although it is the exchange that

guarantees each transaction, they aren't necessarily the party facing default risk. U.S. futures exchanges have established tiers of liability in which they are the top of the totem pole with several safeguards in place to protect them. This might seem unfair to those beneath the exchange in the line of responsibility, but it is important to protect the entity that enables the futures industry to exist and thrive.

Should a futures trader fail to meet the requested margin requirement, the brokerage firm handling the account has the right to liquidate positions as it sees fit to bring the account in line with exchange expectations. In the case of a trading account that has lost more money

than was originally on deposit (yes, this is possible with leveraged speculation), the client is expected to bring the account whole by depositing funds.

However, in the meantime, the individual broker handling the account is personally responsible. His or her commissions are typically held in the amount of the cash deficit as a means of the brokerage firm recovering the loss should the client fail to pay. If the negative balance is large enough, the broker handling the account might not make enough money to pay the deficit and might choose to quit as opposed to working without compensation until the debt is paid. If this is the case, it is the brokerage firm that is responsible for

ensuring that the cash to cover the debit is provided to the exchange. Only in the case of a defaulting client, broker, and brokerage firm will the exchange be liable for losses in excess of funds on deposit. The described accountability of risk and default creates an environment that attracts speculators and creates liquid and efficient markets for users and producers.

Two Types of Margin

There are two types of margin, initial and maintenance. The initial margin requirement is the amount of funds on deposit that the exchange requires an account to have to establish a position;

the maintenance margin is the amount that a trader will need to hold, or maintain, a position. The initial margin will always be higher than the maintenance and, although the differences between the two vary, in most cases maintenance margin is approximately 30% less than the initial requirement.

To illustrate, if the initial margin required for an e-mini S&P futures contract is \$5,000, a trader must have at least this amount in his account to execute the trade. If the stated maintenance margin is 4,000, the trader's account equity must remain above this level to avoid a margin call.

Once a margin call is triggered, the trader must bring his account equity above the initial margin requirement.

What Is a Margin Call?

Although the term implies a phone call, a margin call typically doesn't involve one. Once a futures trading account dips below the maintenance margin requirement, a margin call is issued via a notification on the client account statement and an email correspondence. If you are working with a full-service broker, on the other hand, a personal email or phone call might be involved.

Margin calls shouldn't be feared, nor are

they a reason to panic. Think of it as a friendly reminder from your brokerage firm that you have extended your account beyond reasonable risk parameters of your current account and should begin taking the steps necessary to alleviate the margin deficit.

When Is Margin Measured?

Many beginning traders don't realize the exchange only levies margin once during the trading day. Simply put, your account must be within margin at the close of trade on a particular trading session. Anything that happens in between is nearly irrelevant, assuming that the account is not at risk of losing more than

is on deposit.

This is important because a trader who receives a margin call based on his account positions at the close of a particular day and sends a wire in the exact amount of the margin deficit, could remain on margin call if the positions went against him enough by the close of trade on the *next* day to “eat” the funds that were in transit. Also, because the exchange only measures margin requirements once a day, traders who enter and exit positions within a single trading session are not subject to the stated margin rates. Instead, day traders are free to negotiate a margin rate with their broker, or brokerage.

How Can I Relieve a Margin Call?

There are three courses of action a trader can take to eliminate a margin call once it occurs: 1) add funds, 2) adjust positions, or 3) liquidate some or all of the trades in the account. Most will agree that depositing funds on short notice is the least desirable action. After all, if a margin call is triggered, it is probable that the account is suffering a draw down and throwing “good money after bad” isn’t a logical solution. On the other hand, if you did your homework prior to entering the positions in your account you likely have good reasons to

believe that the market will eventually trade in your favor. One of the most mentally challenging aspects of trading is watching the market move in the manner that you had expected *after* trades have been liquidated. Failure to not benefit in an anticipated move is nearly as emotionally painful as being on the wrong side of a market and actually realizing losses.

Ideally, margin call avoidance is preferable, but even the most responsible traders will encounter the dilemma eventually. Rather than throwing in the towel and liquidating positions, or adding money to an already expensive market error, there is an unlimited number of ways to manipulate

the exchange required margin by reducing the inherent risk of the trade. Naturally, lower risk equates to lower margin and in most cases lower profit potential, but for those who find themselves in a dire margin situation, beggars can't be choosers.

Before we delve into the details of adjusting margin requirements via position adjustments, we must first understand the mechanics of margin in a futures and options account. Futures margin is straightforward in that there is a concrete initial and maintenance margin requirement. The exchange will adjust these requirements from time to time, but for the most part they are straightforward.

Conversely, futures exchanges use a portfolio margining system known as SPAN to assess requirements in accounts that are holding option spreads or a combination of futures and options. For these traders, margin requirements are dynamic and are changing constantly.

The specific parameters used by SPAN are a relatively closely held secret by its developer, the CME. Yet, understanding the basic premise will help you to determine how certain adjustments will impact your margin requirement. To do this, we look at position delta and the manner in which short options are treated in terms of margin.

Knowing Your Net Position

At any given time, a trader should be aware of her net position in each market. This simply means the aggregate long or short exposure in a particular market. For someone trading futures contracts, it is as simple as adding the longs or shorts; a trader who has purchased 5 June T-bond futures throughout the day is net long 5 contracts regardless of fill price.

A trader holding a combination of futures and options, or a combination of long and short options, will have a little more difficulty in determining net position. Keep in mind that most brokerage firms provide a net position figure on client statements, but if you

want to compute it intraday, you are left to your math skills or finding software that will do it for you. Because technology isn't always available or trustworthy, we will do it manually.

Delta

The delta is a mathematical representation of the risk exposure in terms of a ratio. Specifically, it is the degree of change in an option value relative to a price change in the underlying futures contract. For instance, an option with a delta of .50 will appreciate or depreciate half of a point for every 1 point that the futures market moves. Similarly, a futures contract has

a delta of 1 because for every point of price movement the market makes, the trader is making or losing a point. The delta is also a measure of the account's net position; knowing this is the key to adjusting your way out of a margin call.

Adjusting Delta to Adjust Margin and Risk

As mentioned, the delta of a futures contract is 1; therefore, a trader holding a single long July corn futures is net long 1 July corn. The same trader might want to lower his risk and margin by reducing the delta of his position. This can be done in a variety of ways, but all of them involve taking a position with the

opposite directional bias. To illustrate, the purchase of a put acts as an antagonist to a long futures because it stands to profit in a declining market, while the futures profits when prices increase. Similarly, selling a call lowers the exposure of a long futures contract because a short call option benefits from lower pricing, whereas the long futures position must have higher prices to thrive. Alternatively, a trader can simply sell a corn futures with a differing expiration month to create a futures spread. In most circumstances, corn futures with all expiration dates will generally move together. Consequently, being long in one month and short in another will normally involve a very

low delta, or net position, but can also create a different environment to profit.

Margining Short Options

Many don't realize that selling options immediately increases the cash in a trading account. Even though the position is a liability, the cash collected enhances the equity in which margin is measured against. Thus, to a certain point the more premium that you collect, the more funds to use toward margin. Before you assume that option selling is like having your own printing press, you must consider the fact that the premium collected acts as a cushion against margin and losses at expiration of the

option, but it also leaves traders open to theoretically unlimited risk.

The concept of short option margin will be made clearer by looking at a simple example. A trader with a starting account balance of \$10,000 who sells a July soybean \$12.00 call for 15 cents (\$750), will have \$10,750 in cash available to be used toward margin, excluding commissions and fees associated with trade execution. The \$750 doesn't represent a profit until the option expires worthless or is bought back at a lower price at some point prior to expiration; instead it is a liability. Nonetheless, it is a nice benefit to be able to use the "market's money" to help margin your trades.

Naturally, there are no “free lunches”; the exchanges typically incorporate the cash collected for a short option into the option margin. That said, for those who are trading short options around a primary position, or as a component of a more complex strategy, the ability to use collected cash as margin is key. As we cover a few margin adjustment examples in detail, this point will become more clear.

Using a Long Option to Decrease the Margin of a Futures Position

A long option can be looked at as an insurance policy that pays out should a particular event happen within a particular time frame. Car insurance premiums are paid six months in advance, and a claim is paid only if an accident occurs within the coverage period and involves damage above and beyond a known deductible. If no such claim is made against the policy, the insurer keeps the money and the policy of the insured expires worthless. Similarly, an option can be purchased to insure a futures trader that the risk of his position will be limited to a degree based on the “type” of insurance (option) purchased.

For instance, a trader who is long an e-

mini S&P with the intention of holding it for a relatively lengthy time might fear a sudden downturn in pricing due to geopolitical event risk or terrorism. Perhaps the only way for this trader to get a good night's sleep is to purchase insurance on the speculation should the trade go horribly wrong. In doing so, he will also be lowering his required margin dramatically.

A different trader might not mind the risk of holding an unprotected futures position but might find the purchase of an insurance policy as a viable way to dramatically lower the required margin without exiting the position altogether should a margin deficit arise.

Example 1:

Let's assume an exchange minimum initial margin requirement of \$5,625 on the e-mini S&P. A trader long 1 futures contract from 1,180 has a position delta of 1, meaning that for every point the futures moves, she is making or losing 1 point equivalent to \$50. The stated maintenance margin is \$4,500 and the trader's account dips to \$4,300 at the close of trade. Because the account is beneath the required funding to maintain a position, a margin call will be triggered.

At this point, the trader can rush to wire \$1,325 to bring the account balance high enough to meet the initial requirement,

she can liquidate the position, or she might opt to buy a put option. Don't forget that a wire for exactly \$1,325 might not be enough to alleviate the problem. If the market moves against the position before the close of trade on the following day, another wire might be necessary. Those who opt to wire funds should always consider sending above and beyond the required amount to avoid the hassle of having to do it all again the next day.

The hypothetical account began with \$6,000 in cash but the purchase of an option will reduce the very cash that is being used to margin the position. However, purchasing an 1120 put with just under 30 days to expiration for

\$6.00 in premium, or \$300, would reduce the margin requirement enough to eliminate the margin deficit despite the fact that \$300 in cash left the account to purchase insurance.

The delta of the 1120 put is .20; netted against the futures delta the overall position is long .8 futures contracts ($1 - 0.2 = 0.8$). Not only does the insurance reduce the speed at which the position makes or loses money, but it provides the trader with limited overall risk, albeit substantial. The maximum potential loss on this position would be the difference between the futures entry price and the strike price of the long put plus the premium paid, or \$3,300 ($((1180 - 1120) + 6) \times \50). The

exchange recognizes this; accordingly, such a position would typically have an initial margin requirement near, or less than, \$3,300. Assuming this scenario and ignoring transaction costs, the trader could have “bought” her way out of a margin call for \$300 while still standing to benefit from a market rally.

Using a Short Option to Decrease the Margin of a Futures Position

Futures traders who simply want to lower the delta of their position, or slow down the trade, might consider selling

options against their primary speculation. This strategy is built around the same premise of a covered call often used in equity trading.

The sale of an option antagonistic to a futures position doesn't limit the trader's exposure to risk, but it shifts the risk to a more manageable price and lowers the margin required by the exchange substantially.

A trader comfortable with the risk and margin of an outright futures might use option selling as a means of reducing margin and bringing cash into the account (which is used toward margin) should a margin call be triggered on his positions.

Example 2:

Using the previous example, a trader long an e-mini S&P 500 futures from 1180 and under margin pressure might opt to sell a call option against her primary holding. Unlike the first example, the adjustment doesn't limit risk, but it does bring cash into the account, and it offers a hedge against declining prices in the form of a lower position delta. The margin benefits of selling antagonistic options aren't as dramatic as buying them, but it is a viable strategy in some instances.

The sale of a 1200 call for \$13 in premium and just under 30 days to expiration would successfully increase

the account equity by \$650. Assuming that the delta of the 1200 call was .40, the position delta would become .60 to leave the trader net long the equivalent to just over a half of a contract. The cash collected alone would cut the margin deficit in half but the benefit of a lower delta should alleviate more than enough of the required margin to eliminate a margin call.

This adjustment caps the maximum profit potential of the trade to the distance between the strike price and the futures entry plus the premium collected, or \$1,650 $((1200 - 1180) + 13) \times \50 , but I doubt there would be many complaints. The maximum risk of the trade remains theoretically unlimited.

Using a Long Option to Decrease the Margin of a Short Option Position

As previously mentioned, in their simplest form, options can be insurance policies against an adverse price movement in a trader's primary position. An option seller might enjoy the fact that most options expire worthless, making a short option strategy a higher probability method of speculation but might not be equipped to handle the theoretically unlimited risk or hefty margin requirement that comes with the strategy.

The purchase of insurance to cap the risk of an unexpected market move might be a feasible means of lowering position exposure while simultaneously mitigating the margin requirement.

Conversely, a trader who is comfortable with trading short options despite the prospects of potentially large losses in extreme market conditions, might use long options to reduce the margin requirement should a margin call be triggered. In the case of using long options for margin breaks as opposed to legitimate protection, it is a good idea to stick with “cheap” options that are either deep out of the money, close to expiration, or both.

Example 3:

A trader short 5 July crude oil 100 calls for 50 cents (\$500) apiece, a starting balance of \$8,500 and an initial margin requirement of \$8,000 might run into margin trouble in a dramatic rally despite the futures price not being near the strike price of the option. Explosions in volatility in this market are relatively common, and knowing how to deal with them could make a positive impact on your bottom line.

Buying back options in the midst of an explosion in volatility to lock in a large loss only to see the option premiums deflate afterward can be psychologically damaging. Therefore, liquidating a few

of the positions might not be the most efficient means of alleviating the margin call.

In this example, the purchase of a *June* 100 call, with an expiration date one month closer than the July options, for 7 cents or (\$70) per option could lower the margin requirement of the trade enough to avoid premature liquidation.

Purchasing the June calls to offset margin on the July calls would reduce the margin on the position by approximately \$600 per contract, or \$3,000, even after considering the cash spent (about \$350 before commissions). As a result, the new initial margin of \$5,000 versus \$8,000 and would be

enough to alleviate the margin deficit in this example. As painful as it might be to fork out \$350 to offset the margin call, it could be even more painful to exit the trade during panicked trade and inopportune pricing.

The delta on a deep out-of-the-money options is low and does little to improve the overall delta of the position. Nonetheless, it does take some of the edge off risk exposure. The delta of the June 100 call in this example is .02; netted against the .13 delta of the July 100 calls, the position is essentially net short .11 futures per option spread.

In this case, the exchange margin is lowered because the short call is

“insured” by the long call, but the inherent risk (delta) to the trader didn’t really change.

Using a Short Option to Reduce the Margin of a Short Option Position

Many option sellers use a strangle, or straddle, strategy, in which the trader holds a short call and put simultaneously. Assuming the options are similar in risk regarding the distance to the strike price and time to expiration, the exchange assesses margins one side of the trade only. This is because it is

possible to lose money (at expiration) on the call or the put, but not both. For instance, for all intents and purposes, a trader short a call is able to sell a put without adding to the margin requirement. The added cash to the account used toward margin is an added bonus. Keep in mind that this is a simplified generalization.

Strangle margin is treated somewhat like a BOGO (buy one get one) promotion in a retail outlet in that the side of the trade that requires margin is the side that has the highest requirement. In other words, if the short put is considered to be at more risk than the call, adding the put might actually add to the margin. However, the cash added will, in most

cases, be enough to make it a helpful move in toward margin reduction.

On the other hand, a short option trader speculating on direction might not like the idea of being short a put in a market that is believed to be weak. Nonetheless, should margin trouble arise, the sale of the antagonistic option might be enough to alleviate the margin deficit.

Example 4:

The crude oil trader in the previous example might prefer to sell puts against his holdings as opposed to buying protection, which lowers the margin but is otherwise not useful. It might have been possible to sell the July 77 puts for about 50 cents. In doing so, \$2,500 in

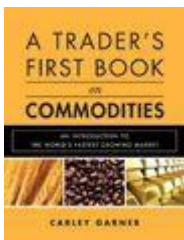
cash would be added to the account and used toward margin. If the initial margin on the 100 calls was \$1,600 and maintenance was \$1,350, in theory the margin on the strangle should be in the same ballpark. Assuming this is true, the cash collected for the short 77 puts works directly against the margin deficit and should be enough to alleviate the call.

In doing so, the trader also lowered his position delta. Assuming a delta of .11 on the \$77 puts, the position delta becomes .02 ($.13 - .11$), nearly neutral.

In Conclusion

Like federal taxes, there is no way of evading margin requirements. However, there are a few ways to avoid its wrath. Strategies such as buying or selling antagonistic options can be used to lessen the odds of receiving a margin call or as an attempt to eliminate a margin deficit once it occurs.

In certain market conditions, it might be possible to combine any or all of the tactics discussed in this writing to achieve your goal of risk and margin reduction. The examples we covered were simple in nature, but creativity is encouraged.



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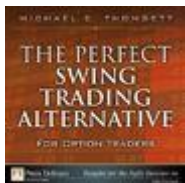
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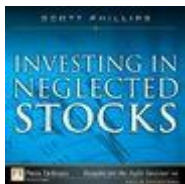
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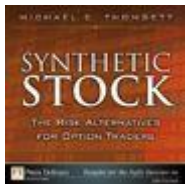
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